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Engineering Licensing Only Thing Between Public and Structural Hazard

For **BELS**

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Engineering is as old as civilization...because it's the infrastructure of civilization. The profession is responsible for enduring structures such as the pyramids, Parthenon, Hagia Sofia, Vietnam's pagodas, and Machu Picchu; roadways, cityscapes, sewers, dams; and all manner of machines. Engineers use math, science, chemistry, and case-study knowledge to develop plans for how things we need will work (and be repaired). As the pace of construction and repair of human structures and machines has hastened, so has the accumulated toll—loss of human life as well as and huge investments. Accidents can occur because of poor planning, lack of knowledge or miscommunication . . . or unforeseen circumstances.

Just this past April in Atlanta, a section of I-20 buckled due to an underground gas leak, catapulting a motorcyclist into the air. This was a couple of weeks after arson caused a bridge on I-85 to collapse.

Complex cities create complex infrastructure.

But who is watching out for the public and, to a larger extent, the population as a whole as the inheritors of the bills caused by shoddy work?

As with other professions critical to everyday functioning, precise standards of practice have emerged, culminating in testing and licensure.

The only way to make certain that an engineer is held to the highest standards of public accountability and has the experience necessary to be trusted with the lives of the people their work will affect is to check that he/she is licensed as a professional engineer (PE).

The industrial era brought to light the danger of complex engineering projects left to whoever was bold enough to take them on, qualifications notwithstanding. In 1889, the hastily constructed Lake Conemaugh, built for wealthy industrialists burst its dam. Four miles of Jonestown city downriver was destroyed. The flood killed 2,209 people, and bodies were later found as far away as Cincinnati. The dam was owned by the South Fork Fishing and Hunting Club, but the courts determined the disaster an "act of God." Dams, bridges, and tunnels were common culprits for engineering gone wrong, which fall in the realm of structural engineering.

By 1947 each state required that engineers be licensed. Work in certain industries does not require professionals to be licensed but by and large those engineers performing work that directly affect public safety are licensed in the jurisdiction in which they practice.

Alabama, for example, currently has nearly 17,000 individuals **licensed as professional engineers** (PE). Interns and businesses offering the practice of engineering within the state can also be licensed and Certificated through BELS.

Obtaining a degree in engineering is just the beginning of a professional engineer's career readiness. After passing the Fundamentals of Engineering exam, an engineer, must have at least four years of work experience in the field before being able to sit for the **Professional Engineering (PE) exam**. They also need references, including some from licensed PEs, before being allowed to take the exam.

State laws more specifically regulate who can be licensed to practice and how licensees are to conduct themselves in practice.

Marc Barter of the **Alabama Board of Licensure for Professional Engineers and Land Surveyors** says, "The Board of Licensure protects the public's interests by working to make sure that those individuals that practice engineering or surveying have completed a rigorous educational program, have demonstrated the ability to apply their education in a work setting, and have passed an examination that is intended to test the individual on the application of engineering principles in the solution of real life problems."

In performing this function Barter ascertains that **BELS also protects** the public's interest, which is to have good work done by qualified people.

Barter, the founder of a structural engineering firm in Mobile, stresses the inherent tension between cost and quality in the business.

"Many people do not realize that the engineer's involvement in the project can range from design, site evaluation, and follow up, to piecemeal consulting," he says, "If engineers reduce services to suit client budgets, they have to make sure public safety is not jeopardized."

Delivery methods that seek to erode the influence of engineers, though, concern Barter - and the clients or the public as a whole who may pay the price later.

In 2009 a Shanghai apartment complex with 629 units, many of which had already been sold, collapsed due to improper excavation of a parking garage. That complex, "Lotus Riverside," was one of many Chinese pop-up construction projects gone wrong in the past decade. Only one person was killed when the building's 13 stories toppled, but imagine if that happened in New

York City.

Imagine if it happened right here in Alabama.

Engineering is difficult enough without cutting corners. Barter recommends that any engineer working in any capacity be licensed or be on the path to obtaining their license. The job is simply too critical and too involved to not be adequately qualified.

Find out if your engineers are licensed at the **[Alabama Board of Licensure for Professional Engineers and Land Surveyors](#)**.

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